

D.P.U. 92-255

Petition of New England Power Company, under G.L. c. 40A, § 3,  
seeking exemption of a proposed electric substation and related  
facilities from the zoning bylaws of the Town of Palmer.

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APPEARANCE: Kathryn J. Reid  
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FOR: NEW ENGLAND POWER SERVICE

COMPANY

Petitioner

## I. INTRODUCTION

On November 19, 1992, New England Power Company ("NEPCo or "Company")<sup>1</sup> filed a petition with the Department of Public Utilities ("Department") pursuant to G.L. c. 40A, § 3 for an exemption from the zoning by-laws of the Town of Palmer. According to its petition, the Company seeks the zoning exemption in order to construct, operate, and maintain a proposed electric substation and related facilities. NEPCo proposes to install, maintain and operate such equipment and structures on a Company-owned, 3.5-acre parcel of land located on the westerly side of Thorndike Street in Palmer, Massachusetts (Exh. NEP-1, at 1). The Company indicated that approximately 60 percent of the site is in an existing NEPCo transmission right-of-way ("ROW"), containing 115 kV and 345 kV lines (Exh. DPU 1-3).

The affected parcel of land situated in Palmer is zoned for residential use,<sup>2</sup> and does not permit the uses proposed by the Company (Exhs. NEP-1, at 2; DPU 1-1). The Company stated that it is requesting exemptions from the following sections of the Palmer zoning by-laws: (1) Article VIII, Establishment of Districts - Uses, Section 171-

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<sup>1</sup> NEPCo is an affiliate of Massachusetts Electric Company ("MECo") which provides retail electric service to the Town of Palmer and the surrounding communities (Exh. NEP-1, at 1; Tr. at 11).

<sup>2</sup> The parcel is located in a R-30, Village High Density Residential District (Exh. NEP-1, at 3). The Town of Palmer has two residential districts, the other being a R-40, Agricultural/Low Density Residential District (Exh. NEP-1B).

36, General Use Restrictions; (2) Article V, Site Plan Review, Section 171-25, Projects Requiring Site Plan Review; and (3) Article III, General Building and Lot Dimensional Requirements, Section 171-15, Dimensional Regulations (Exh. DPU 1-1).

NEPCo is a public service corporation and an electric company as defined under G.L. C. 164, § 1, authorized to generate, transmit, purchase, sell and distribute electricity (Exh. NEP-1, at 1).

## II. PROCEDURAL HISTORY

Pursuant to an Order of Notice duly issued on October 21, 1993, the Department conducted a public hearing on the Company's petition in the Town of Palmer on November 17, 1993. Jennifer Grimsley, manager of district engineering for the Western District of MECo and Donald Shapleigh, project engineer for NEPCo, presented a summary of the petition and the proposed project (Tr. at 14-20, 23-45). Area residents raised concerns regarding truck traffic and the potential for conflicts with school bus transportation, noise impacts, hours of construction, and health issues (id. at 22, 24, 26, 46-47).<sup>3</sup>

No petitions for leave to intervene were submitted to the Department. The Department determined that an evidentiary hearing

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<sup>3</sup> The testimony by area residents at the public hearing was presented as unsworn testimony. Therefore, such testimony cannot be considered as evidence in this case.

was not necessary and rendered a decision based on the written evidence submitted in this case.<sup>4</sup> The Hearing Officer entered 50 exhibits into the record, consisting of responses to information requests. The Company entered 21 exhibits into the record.

### III. STANDARD OF REVIEW

In its petition for a zoning exemption, the Company seeks approval under G.L.

c. 40A, § 3, which, in pertinent part, provides:

Land or structures used, or to be used by a public service corporation may be exempted in particular respects from the operation of a zoning ordinance or by-law if, upon petition of the corporation, the [D]epartment of [P]ublic [U]tilities shall, after notice given pursuant to section eleven and public hearing in the town or city, determine the exemptions required and find that the present or proposed use of the land or structure is reasonably necessary for the convenience or welfare of the public....

Under this section, the Company first must qualify as a public service corporation (see Save the Bay, Inc. v. Department of Public Utilities, 366 Mass. 667 (1975)), and establish that it requires an exemption from the local zoning by-laws. The Company then must

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<sup>4</sup> On February 14, 1994, the Company was notified that the Department did not intend to hold an evidentiary hearing in this matter. However, the Company was given the option to request such a hearing.

demonstrate that the present or proposed use of the land or structure is reasonably necessary for the public convenience or welfare.

In determining whether a company qualifies as a "public service corporation" for purposes of G.L. c. 40A, § 3, the Supreme Judicial Court has stated:

among the pertinent considerations are whether the corporation is organized pursuant to an appropriate franchise from the State to provide for a necessity or convenience to the general public which could not be furnished through the ordinary channels of private business; whether the corporation is subject to the requisite degree of governmental control and regulation; and the nature of the public benefit to be derived from the service provided.

Save the Bay, supra, at 680.

In determining whether the present or proposed use is reasonably necessary for the public convenience or welfare, the Department must balance the interests of the general public against the local interest. Id. at 685-686; Town of Truro v. Department of Public Utilities, 365 Mass. 407 (1974). Specifically, the Department is empowered and required to undertake "a broad and balanced consideration of all aspects of the general public interest and welfare and not merely [make an] examination of the local and individual interests which might be affected." New York Central Railroad v. Department of Public Utilities, 347 Mass. 586, 592 (1964). When reviewing a petition for a zoning exemption under G.L. c. 40A, § 3, the

Department is empowered and required to consider the public effects of the requested exemption in the State as a whole and upon the territory served by the applicant. Save the Bay, supra, at 685; New York Central Railroad, supra, at 592.

With respect to the particular site chosen by a petitioner, G.L. c. 40A, § 3 does not require the petitioner to demonstrate that its preferred site is the best possible alternative, nor does the statute require the Department to consider and reject every possible alternative site presented. Martarano v. Department of Public Utilities, 401 Mass. 257, 265 (1987); New York Central Railroad, supra, at 591; Wenham v. Department of Public Utilities, 333 Mass. 15, 17 (1955). Rather, the availability of alternative sites, the efforts necessary to secure them, and the relative advantages and disadvantages of those sites are matters of fact bearing solely upon the main issue of whether the preferred site is reasonably necessary for the convenience or welfare of the public. Id.

Therefore, when making a determination as to whether a petitioner's present or proposed use is reasonably necessary for the public convenience or welfare, the Department examines (1) the present or proposed use and any alternatives or alternative sites identified (see Massachusetts Electric Company, D.P.U. 92-232, at 17-18 (1993); Tennessee Gas Pipeline Company, D.P.U. 92-261, at 21-22 (1993)) ("1993

Tennessee Gas"); Tennessee Gas Pipeline Company, D.P.U. 85-207, at 18-20 (1986)("1986 Tennessee Gas")); (2) the need for, or public benefits of, the present or proposed use (see Massachusetts Electric Company, supra, at 17-18; 1993 Tennessee Gas, supra, at 21-26; 1986 Tennessee Gas, supra, at 6-9); and (3) the environmental impacts or any other impacts of the present or proposed use (see Massachusetts Electric Company, supra, at 18; 1993 Tennessee Gas, supra, at 27-29; 1986 Tennessee Gas, supra, at 20-25.

After examining these three issues, the Department balances the interests of the general public against the local interest, and determines whether the present or proposed use is reasonably necessary for the convenience or welfare of the public.

In addition, the Massachusetts Environmental Policy Act ("MEPA") provides that "[a]ny determination made by an agency of the commonwealth shall include a finding describing the environmental impact, if any, of the project and a finding that all feasible measures have been taken to avoid or minimize said impact." G.L. c. 30, § 61. Pursuant to 301 C.M.R. § 11.01(3), these findings are necessary when an Environmental Impact Report ("EIR") is submitted by a company to the Secretary of Environmental Affairs, and should be based on such

EIR. Where an EIR is not required, G.L. c. 30, § 61 findings are not necessary. 301 C.M.R. § 11.01(3).<sup>5</sup>

IV. DESCRIPTION

A. Need for the Proposed Project

NEPCo requests a zoning exemption from the Department to construct a substation on a fenced and graded area 185 feet by 150 feet (Exh. DPU 1-2). The construction of the substation would consist of two phases, referred to as the initial installation and the ultimate installation (id.). The Company indicated that the initial installation would consist of: (1) a control building to house control, communication and monitoring equipment, approximately 20 feet by 20 feet by 10 feet; (2) a 115 kV to 13 kV three phase power transformer; (3) a 115 kV "A frame" 46 foot high structure; (4) equipment for two 13 kV feeder positions; and (5) a 13 kV capacitor bank (id.; Exh DPU 1-2; NEP-3, at 2). Further, the Company indicated that the ultimate installation would consist of: (1) a second 115 kV to 13 kV transformer; (2) three full bays of 13 kV standard structures to supply

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<sup>5</sup> The Secretary of Environmental Affairs determined on December 23, 1993 that an EIR is not required for this project (see Environmental Monitor, January 10, 1994; Exh. DPU 2-9).



six feeders; (3) a second capacitor; and (4) a 115 kV power circuit breaker (id.).<sup>6</sup>

The Company indicated that the initial phase of construction would take six months, and depending on the date of Department approval, would commence in the late spring of 1994 (Tr. at 19). Ms. Grimsley, the Company's witness, explained that the equipment associated with the ultimate layout is not required in the study period that was reviewed in the Monson Area Supply and Distribution Study ("Monson Study")<sup>7</sup> (id. at 29). The Company further stated that the ultimate layout would probably be installed in a piecemeal manner, as

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<sup>6</sup> NEPCo indicated that if it is granted an exemption for the use of the proposed site as a substation, it has concluded that adding the equipment associated with the ultimate layout would not constitute a new use of the site or an expansion beyond the proposed site plan (Exh. DPU 2-4). Therefore, the Company contends that if an exemption for the initial installation is granted, it would be duplicative for the Company to request the Department to re-exempt an already exempted parcel of land at the time the Company determines that it is necessary to go forward with the ultimate installation (id.) NEPCo further noted that if the exemption for the initial installation were granted, no additional approvals would be necessary for installation of the ultimate layout equipment, provided construction remained consistent with the plans and testimony submitted in this proceeding (id.).

<sup>7</sup> The Monson Study, dated March 1990, encompasses the supply and distribution results for the area through the year 2005 (Exh. DPU 1-6A, at 2-1). The Monson Public Service Area ("PSA") includes Palmer, Monson, East Longmeadow, Hamden, Warren, Wilbraham, Ware, Hardwick, Granby, Belchertown, Brimfield, Wales, and Holland (id.).

some of the distribution feeders may be required earlier, depending on load growth in the area (id.). In addition, NEPCo indicated that the stages for constructing the ultimate layout components are not associated with specific years but are dependent on the load levels in the area (Exh. DPU 2-4).

NEPCo stated that Palmer is presently served by three substations, the Shearer's Corner, Thorndike,<sup>8</sup> and Palmer (also referred to as Blanchardville) substations (Exh. NEP-2; Tr. at 41). The Company indicated that the Shearer's Corner and existing Thorndike substations are supplied by the 23 kV system, which is supplied by the No. 5 and No. 6 115/69/23 kV transformers at the Palmer substation (Exh. NEP-2, at 3). The Company asserted that the Monson Study determined that the loss of either the No. 5 or No. 6 transformer at the Palmer substation would result in the remaining transformer being loaded above its emergency capacity, thereby limiting emergency capability (id.; Exh. DPU 1-5). The Company explained that the purpose of the new substation is to transfer load from the 23 kV system to the 115 kV system, alleviating

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<sup>8</sup> The proposed substation is also named the Thorndike substation. The Company stated that the existing Thorndike substation, located off Church Street, will remain in operation, however, serving less load (Tr. at 42).

contingency loading on the Nos. 5 and 6 transformers (id.).<sup>9</sup> The Company reported that the construction of the new substation would improve reliability in the Palmer area, which is presently below the NEPCo system average (Tr. at 15).

B. The Proposed Project and Alternatives

The Company explained that the Monson Study presented four comprehensive plans ("Plan 1" through "Plan 4") to provide continued reliable electric service to the Monson area, and further identified the proposed Thorndike substation as a component of Plan 1 (Exhs. DPU 2-1; NEP-2, at 3).<sup>10</sup>

The Company asserted that Plan 1 was selected over the alternatives based on economics, reliability, and loss savings (Exhs.

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<sup>9</sup> According to the New England Electric System companies' supply planning guidelines, the transformer loadings at Palmer must be kept within the firm capability of one transformer for foreseeable contingencies, such as the loss of the other transformer (Exh. DPU 2-3). Therefore, the existing load on the Palmer transformers is not within their firm capability (id.). The Company stated that the proposed Thorndike substation will transfer load from the No. 5 and No. 6 transformers, thereby keeping each transformer within its firm capability (id.).

<sup>10</sup> The four plans were evaluated to provide relief to the existing supply and distribution facilities and to allow for future load growth (Exh. DPU 1-6A at 1-1). The assumptions for load growth to the year 2005 are based on 3.3 percent from 1989 through 1994, and 1.4 percent for the years 1994 through 2005 (id. at 3-1; Exh. NEP-2). The annual growth rate in Palmer has been 1.6 percent from 1983 through 1992 (Exh. NEP-2, at 3).

DPU 2-1; NEP-2, at 5). The Company provided data from the Monson Study indicating that Plan 1 had a clear economic advantage over Plans 2, 3, and 4 (Exh. DPU 1-6A, Tables 6-1 through 6-4). The Monson Study indicated that in the later years of the study period, the losses for the three alternative plans range from 1.5 to 8 times greater than those for Plan 1 (id. at 6-1).

Ms. Grimsley, the Company witness, stated that in the context of the different plans, there were two alternatives to the proposed Thorndike substation (Tr. at 42). The first alternative was to install a third 50 MVA transformer at the Blanchardville substation and upgrade two 23 kV transmission lines as well as upgrade the 13 kV equipment at all three of the existing substations in Palmer (id.; Exh. DPU 1-6A at 4-7; ). The second alternative involved constructing a new 115 kV to 23 kV substation in a different location and upgrade two 23 kV transmission lines as well as upgrade the 13 kV equipment at two of the substations in Palmer (Exh. DPU 1-6A at 4-12, 4-17; Tr. at 42).

The Company stated that it also considered alternative sites on which to locate the proposed Thorndike substation, based on the following criteria: (1) land availability -- specifically land presently owned by, or available to, the Company; (2) access to transmission system elements of the appropriate voltage -- in this case the 115 kV transmission line ROW; (3) access to the existing distribution system;

and (4) environmental impact, such as wetland impacts and proximity to residences (Exh. DPU 1-5). Based on the above criteria, the Company identified the intersection of the 115 kV line and Thorndike Street and the intersection of the 115 kV line and Palmer Street (id.). NEPCo stated that the Palmer Street intersection was deemed unsuitable due to the height of the 115 kV lines, the steep grade of the property, and the presence of wetlands on the site (id.; Tr. at 55). The Company indicated that the wetlands at the Palmer Street site are extensive, encompassing over three acres, including approximately one acre located on the NEPCo property, and that use of the site would necessitate the filling of the existing wetland (Exh. DPU 2-22). With respect to the Thorndike Street intersection, the Company stated that it separately considered each of the four quadrants, based on the above criteria, and deemed the southwest quadrant to be the preferred site (Exh. DPU 1-5). The Company asserted that the southwest quadrant was preferable to the other quadrants as that site: (1) is located on the same side of the ROW as the 115 kV line; (2) has more land available for a buffer between the facility and the residences; and (3) has the presence of natural screening (id.).

### C. Impacts of Proposed Project

In accordance with its responsibility to undertake a broad and balanced consideration of all aspects of the general public interest and

welfare, the Department examines the impacts associated with the proposed project to identify any significant impacts which would likely occur during construction and operation of the proposed project.

1. Electric and Magnetic Fields

With respect to electromagnetic fields ("EMF") relative to the initial installation, the Company asserted that the magnetic fields associated with the transmission supply lines leaving the proposed substation would be negligible at the edge of the ROW (Exh. DPU 1-10).<sup>11</sup> The Company explained that the magnetic field levels in the vicinity of the proposed substation are dependent on the load flowing on the 115 kV transmission line, which runs from Ludlow to Palmer (Exh. DPU 2-12). The Company further explained that presently most of the load in the Palmer area is supplied from the west, the direction of Ludlow and that the magnetic field levels, therefore, would increase slightly on the western side of the substation where the 115 kV line enters the substation since the load flowing from Ludlow to Thorndike

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<sup>11</sup> The Company stated that two 13 kV underground distribution lines would be installed from the substation to Thorndike Street, where they would rise to connect to the existing overhead system (Exh. DPU 2-10). The Company calculated that peak magnetic field levels one meter above the ground would be 21 milligauss ("mG") directly over the center of the underground cables, diminishing to 1.3 mG and .09 mG at distances of twenty five feet and thirty feet, respectively, from the center line of the cables (id.).

increases slightly on the west side of the substation, and decreases slightly on the east side of the substation (id.). NEPCo provided estimates detailing that with initial installation of the proposed substation the magnetic field levels at the nearest edge of the ROW would increase by .3 mG on the western side, and decrease by 1.2 mG at the eastern side of the substation (Exhs. DPU 1-10; DPU 2-19).

NEPCo further indicated that it calculated estimates of the magnetic field levels at the edge of the ROW for the proposed project, including the initial installation and ultimate layout, based on: (1) a peak load of 48 MVA at the proposed substation; (2) normal load growth of 1.5 percent up to the year 2005 in the surrounding Palmer PSA area; and (3) the projected generation dispatch and transmission system configuration under the 1995 system (Exh. DPU 2-19). NEPCo provided estimates detailing that the magnetic field levels with both the initial installation and ultimate installation, would increase by 5.1 mG on the western side of the substation at the nearest edge of the ROW, and decrease by 1.0 mG on the eastern side of the substation at the nearest edge of the ROW (id.). However, the Company indicated that the future magnetic field levels associated with the ultimate layout depend on both the load at the Thorndike substation and the load flow of the 115 kV system as reconfigured, and in the future the Palmer load

could be fed predominantly from the east, as opposed to the load flow from the west as it is presently operates (id.).

Relative to the initial installation, the Company provided calculations indicating that, with operation of the proposed substation, peak magnetic field levels at the closest residences to the east and west of the proposed substation, would decrease or remain the same (Exh. DPU 2-11). Further, the Company provided calculations indicating that, as a result of changes in the power flow on the low voltage system, magnetic field levels would increase from 0.1 mG to 0.7 mG and from 1.3 mG to 3.5 mG, at the residences with the highest expected peak-load magnetic field impact along Palmer Street and Thorndike Street (id.). Finally, the Company provided calculations of the distances from both edges of the ROW at which peak magnetic field levels would diminish to 2.5 mG, and asserted that the affected area would be negligible at the edge of the ROW (Exh. DPU 2-13).

## 2. Noise

NEPCo conducted an audible noise study indicating that the existing average nighttime ambient noise level is 37.6 decibels ("dB"), and that the modeled noise contribution from the proposed facility at the nearest existing residence would be approximately 5 dB below the



ambient noise level (Exh. DPU 1-8C).<sup>12</sup> NEPCo asserted that the substation would meet the Department of Environmental Protection Noise Guidelines, as the substation noise levels would not be perceptible over the ambient noise level, thereby falling far below the 10 decibel increase allowed under the guidelines (Exh. DPU 2-18; Tr. at 37-39). The Company further stated that the transformer noise would not be noticeable at the nearest residence, located 250 feet from the transformer (Exh. NEP-3, at 5).

The Company indicated that the transformers will be equipped with noise reduction equipment that will hold the sound level 10 dB below the industry standard for that type of transformer (id.; Exh. DPU 1-8C). Based on analyses of the separate noise impacts of the two transformer installations, as well as the combined effects of both transformers consistent with the ultimate installation, the Company confirmed that any additional operational noise will be masked by the existing ambient noise levels (Exhs. DPU 1-8C; DPU 2-19; Tr. at 39). In regard to noise associated with construction of the substation, the Company asserted that such noise would be similar in scope to that

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<sup>12</sup> The Company stated that these sound levels take into account both the transformer contemplated in the initial installation and the one contemplated in the ultimate installation (Exh. DPU 2-19).

associated with the construction of private housing, and further, that construction equipment would be muffled (Exh. DPU 2-17).

3. Construction and Traffic

NEPCo stated that the normal hours of construction would occur between 7:00 am and 4:00 pm on weekdays, encompassing three components of construction -- site preparation, primary electrical construction, and control wiring (Exhs. DPU 2-17; DPU 2-20).

However, as exceptions to this work schedule, the Company indicated that three tasks would necessitate working an extended day, from 7:00 am to 7:00 pm, including the connection to the transmission system, perhaps occurring on a weekend, and the installation of each transformer (id.). The Company indicated that access to the site would be from Fuller Street, and that it would work with town officials and police to address any traffic concerns regarding traffic on said street (Exh. DPU 2-21). Further, the Company indicated that residents of Fuller Street would be notified when large equipment is to be transported to the site (id.).

4. Visual

The Company's witness, Mr. Shapleigh, stated that the site is presently shielded from the street by native vegetation, and that the Company intends to preserve as much of the existing trees and shrubs as possible (Exh. NEP-3, at 5). The Company presented a landscaping

plan for the site, showing that arborvitae would be planted along the perimeter of the eight-foot facility fence and the driveway (Exh. NEP-4, Att. DRS-4). The Company explained that the arborvitae would be six feet high at planting, and after reaching nine feet in height in five to seven years, the arborvitae would be trimmed to maintain the approximate nine foot height (Exh. DPU 2-6). NEPCo indicated that the substation would be equipped with safety lighting, which would only be used if operating personnel are working within the substation after dark, and then only in the targeted work area (Exh. DPU 2-23). The Company acknowledged that when the lights are in service they would be visible to some of the surrounding residences in the winter, when screening is minimal (id.).

5. Other

NEPCo retained Ransom Environmental Consultants, Inc. ("Ransom") to investigate possible on-site contamination due to prior ownership (Exh. DPU 1-8). Ransom determined that the site had areas of petroleum impacted soil due to the presence of a 55-gallon drum of kerosene and an overflow pipe from a previously used septic system (Exh. DPU 2-8). The Company indicated that the contaminated soil was excavated and transported from the site by Clean Harbors, Inc., and that Ransom indicated that no additional remedial response actions were necessary (id.). With respect to materials required for the

proposed project, the Company stated that the only such material that could be hazardous if spilled would be mineral oil dielectric fluid ("MODF") contained in the transformers (Exh. DPU 2-14). The Company explained that the transformers would be equipped with sumps, designed to retain any spilled MODF for at least 72 hours, and further, that each transformer would be alarmed for a low oil condition (id.).

NEPCo provided information from the Palmer Historical Commission stating that the siting of the substation, in the vicinity of the former Hamden Railroad Thorndike Depot, is not a concern as the remains of the railroad do not warrant historic preservation (Exh. DPU 2-9). However, the Historical Commission has suggested, and the Company has agreed, that a commemorative plaque be placed at the site identifying the site of the former railroad depot (id.; Exh. DPU 1-3).

Finally, in regard to a small wetland located on-site, the Company provided correspondence confirming that the Town of Palmer Conservation Commission does not consider the wetland to be significant, therefore, negating the necessity for compliance with the wetland by-law (Exhs. DPU 2-15; DPU 1-7).

V. ANALYSIS AND FINDINGS

G.L. c. 40A, § 3, authorizes the Department to grant to public service corporations exemptions from local zoning ordinances or by-laws if the Department determines that the exemption is required and finds that the present or proposed use of the land or structure is reasonably necessary for the convenience or welfare of the public.

NEPCo is an electric company as defined by G.L. c. 164 § 1, authorized to generate, transmit and distribute electricity. Accordingly, the Company is eligible to petition the Department as a public service corporation for an exemption from local zoning by-laws, pursuant to G.L. c. 40A § 3.

As discussed, supra, the Company's petition seeks exemption from specific zoning by-laws of the Town of Palmer. Based on its review of the Town of Palmer zoning by-laws, the Department concludes that Sections 171-36, 171-25, and 171-15 of the by-laws could impede construction and implementation of the Company's proposed substation construction, and that the remaining sections are not applicable to the Company's proposal and would not impede such construction. Therefore, the Department determines that the Company's proposed additions and related facilities would require exemptions from Sections 171-36, 171-25, 171-15 of the zoning by-laws of the Town of Palmer.

However, the Department notes that the Company's zoning exemption for the substation address two phases, the initial installation, scheduled to commence in the spring of 1994 and the ultimate installation, with an uncertain start date, commencing as far in the future as the year 2005. The components of the initial installation have been detailed by NEPCo and will be constructed in one phase. The components of the ultimate installation, while detailed by the Company, are to be constructed in stages, to be determined by the need for load in the area. The Department notes that it cannot know with any certainty, what will be acceptable environmental guidelines, such as those for EMF or noise, in the future. In addition, as noted above for the ultimate installation, this future time frame could be ten or more years away. Given this uncertainty, the Department at this time is unable to balance the interests of the general public against the local interest to determine whether the ultimate installation is reasonably necessary for the public convenience or welfare. Therefore, the Department disagrees with the Company's assertion that a subsequent zoning procedure relative to the ultimate installation would be duplicative.

Further, the Department notes that if NEPCo had applied to the Town of Palmer for a zoning variance, as an alternative to requesting a zoning exemption through the Department, the Company would be

required by law to exercise the variance by a specified time frame. Specifically, according to G.L. c. 40A § 10, if the rights authorized by a variance are not exercised within one year of the granting of the variance, the rights will lapse, however, the permit granting authority can extend such rights by six months if so petitioned within the one year time frame. Therefore, the Department finds, given the extended time frame for the ultimate installation to be completed, it is appropriate to confine the request for a zoning exemption to the initial installation as described in Section IV, supra.

Next, the Department examines whether the Company's proposed use of the land and structures as set forth in its petition is reasonably necessary for the convenience or welfare of the public. With respect to the need for, and the public benefits of, the proposed facility, the Company has established that the proposed facility will provide benefits as a result of increased reliability in the Monson PSA, specifically the ability of the system elements serving the Palmer service area to stay within their stated firm capability. The record indicates that the proposed expansion will reduce or eliminate the possibility that the loss of either the No. 5 or No. 6 transformer would result in the remaining transformer being loaded above its emergency capability. In addition, the record indicates that NEPCo considered a reasonable range of alternative projects in developing a strategy for the Monson

PSA, and the Palmer area in particular, to receive a reliable and efficient supply of electric power from NEPCo.

The record further indicates that the Company has considered possible environmental and land use impacts of the proposed Palmer substation that may be of concern to the surrounding community, including issues of EMF, noise, traffic, visual, safety and hazardous waste, historical, and wetlands impacts. To that extent, the Company: (1) conducted detailed analyses on EMF, noise, and hazardous waste; (2) prepared a landscaping plan; and (3) contacted the Town of Palmer Conservation and Historical Commissions for their input into possible impacts.

Thus with the implementation of the mitigation measures proposed by the Company as required in Section VI, infra, the Department finds that the general public interest in constructing the Thorndike substation, specifically the initial installation, outweighs the minimal impacts of the Company's proposed project on the local community. Accordingly, the Department finds that the proposed additions and related facilities, as confined to the initial installation, are reasonably necessary for the public convenience or welfare.

VI. ORDER

Accordingly, after due notice, hearing and consideration, it is hereby



ORDERED: That the petition of NEPCo be allowed and that the proposed facilities, referred to as the initial installation,<sup>13</sup> as described in the Company's exhibits on file with the Department, be exempt from the operation of the following zoning by-laws of the Town of Palmer, pursuant to G.L. c. 40A, § 3, to the extent that the facilities are used for electric power transmission purposes: Section 171-36, General Use Restrictions; Section 171-25, Projects Requiring Site Plan Review; and Section 171-15, Dimensional Regulations; and it is

FURTHER ORDERED: That the Company shall comply with the following requirements:

- (1) That the Company shall take all necessary measures to ensure that the Thorndike substation site is appropriately graded, and that pre-existing cover vegetation is restored, where practical, and that all construction debris, including any site preparation and excavation debris, shall be removed from the site upon completion of the proposed construction;

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<sup>13</sup> The initial installation would consist of: (1) a control building to house control, communication and monitoring equipment, approximately 20 feet by 20 feet by 10 feet; (2) a 115 kV to 13 kV three phase power transformer; (3) a 115 kV "A frame" 46 foot high structure; (4) equipment for two 13 kV feeder positions; and (5) a 13 kV capacitor bank.

- (2) That the Company's landscaping plan is implemented in a manner consistent with its submissions and representations in this case;
- (3) That the Company place a commemorative plaque on the site, identifying the historical location of the former Hamden Railroad Thorndike Depot;
- (4) That the Company shall take all necessary measures to preclude unauthorized entry into the substation, both during and after construction hours, and once construction is completed;
- (5) That the Company shall provide to any resident in the proposed Thorndike substation area, upon request, EMF measurements, taken after the proposed project is completed and operational;
- (6) That the Company shall take all necessary measures to ensure that construction equipment and materials do not arrive at the Thorndike substation before 7:00 am on any day; and it is

FURTHER ORDERED: That the Company shall obtain all governmental approvals necessary for this project before its construction commences; and it is

FURTHER ORDERED: That the Secretary of the Department shall transmit a certified copy of this Order to the Town Clerk of the Town of Palmer; and that New England Power Company shall serve a copy of this Order upon the Planning Board and Board of Selectmen of

the Town of Palmer within five business days of its issuance and shall certify to the Secretary of the Department within ten business days of its issuance that such service has been accomplished.

By Order of the Department,